VOL. 2 APRIL • 1945 NO. 2

THE FOCAL SPOT

JOURNAL OF THE CANADIAN SOCIETY OF RADIOLOGICAL TECHNICIANS

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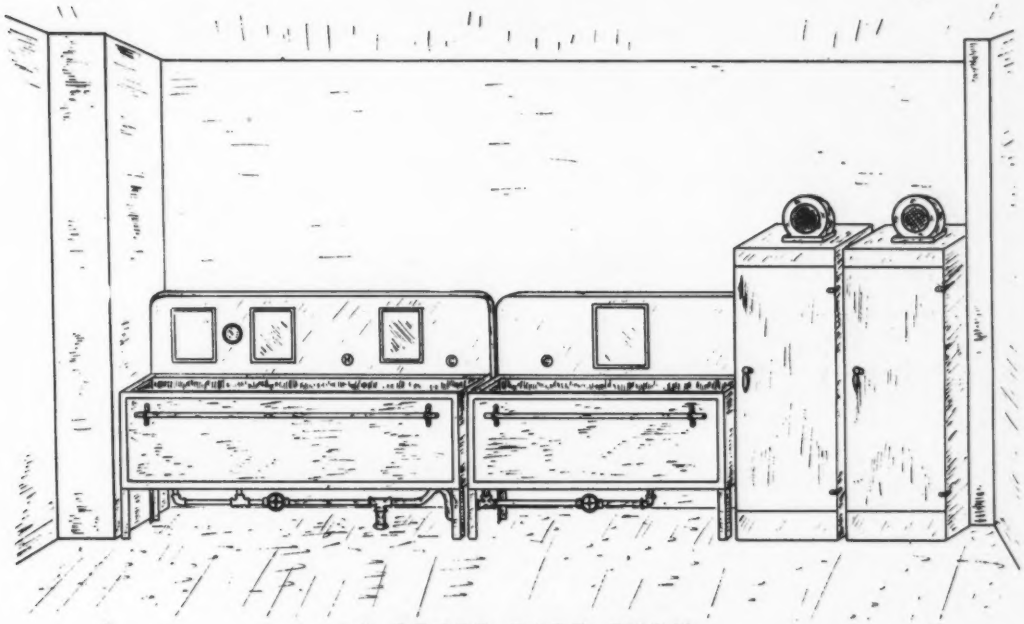

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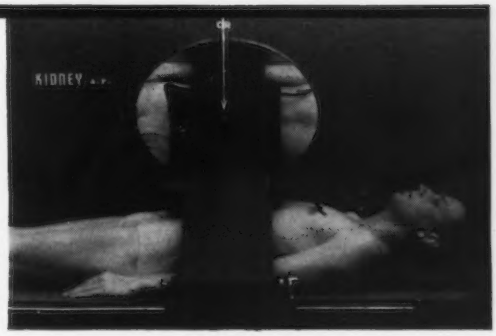

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Third Annual Convention C.S.R.T.

MONTREAL

Thursday, Friday, Saturday

May 31st

June 1st and 2nd

A visit to Montreal would be justified for its cosmopolitan atmosphere alone. It is the second largest French city in the world, Paris alone being larger. It houses some of the most beautiful churches on the continent. A large collection of historical relics may be seen at the Cathedral of Notre-Dame. Montreal, located on the island of Montreal, flanked by the St. Lawrence River, extends a most hearty welcome to the 1945 Convention. She has ways and means to entertain her guests. Time will be short to see all that she has to show you. If you are a lover of flowers, the Botanical Gardens have an international reputation. Many technical treats are in store for the delegates. Members will be welcomed to the city on Thursday morning by His Worship Mayor Houde and the next three days will include such well-known x-ray figures as Herbert Mermagen, Director of Industrial X-Ray Laboratory, University of Rochester; H. C. Mahoney, Victor X-Ray Corporation, Chicago; Lieutenant Commander C. Vaughan of Hamilton and Halifax; Mr. R. Ingram, Strong Memorial Hospital, Rochester, New York, and many others.

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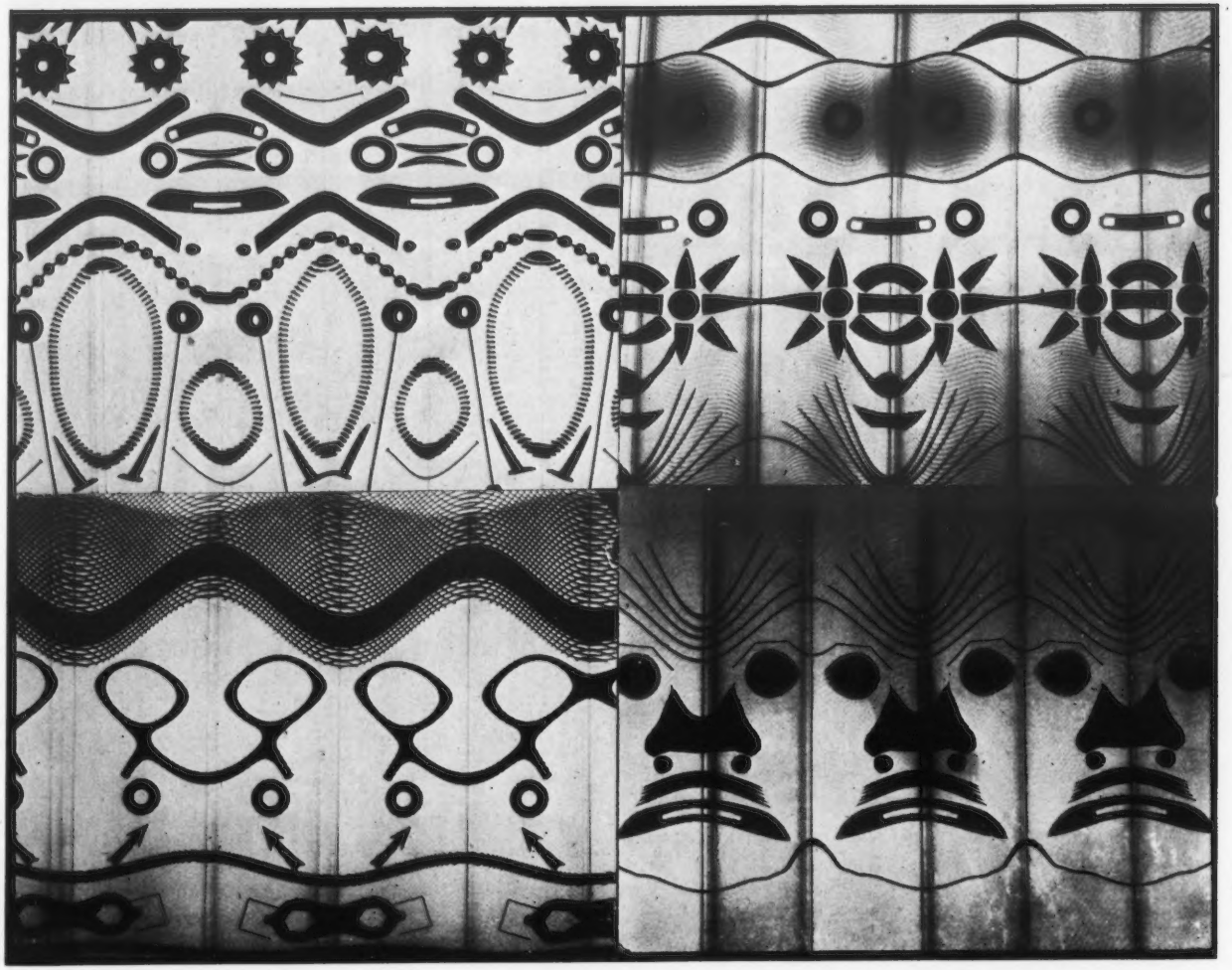
EDITORIAL

To an onlooker on the side-lines it appears that the coming Dominion Convention will provide some pretty heated discussions on matters of constitution and policy. Differences of opinion are a sign of a healthy, active body; far better than a placid acceptance of everything without remark. But delegates should remember that we are all striving for the good of the Society as a whole and must not allow personal differences to do anything to disrupt the structure of a body which is still young and tender and as yet has barely taken root.

The necessity of saving waste paper for war purposes has had a great deal of publicity and the campaign has achieved great results. The necessity of salvaging films no longer needed in the files has had very little publicity and the quantity of films reclaimed is relatively small. The fact remains, however, that the reclaimed silver salts are of great value to the war effort in these days when so much vital photography and x-ray work is being done, and the cellulose base has innumerable applications. May we therefore urge you to take time to check over and salvage the films you no longer need.



NOVEL APPLICATION OF X-RAYS IN THE FIELD OF DECORATIVE DESIGN

See if you can figure out how it was done; then turn to page 68.

Kinks and Gadgets in the X-Ray Dept.*

By LESLIE THOMPSON,
Sarnia General Hospital, Sarnia, Ont.

The purpose of this paper is to show the use of a few kinks and gadgets which the writer has found helpful in the X-ray Department over a period of years.

Some articles are made commercially by the various radiological supply houses and the others can be put together by the technician without much trouble.

Facilitating Positioning

A prime requisite of good x-rays is proper centering, as we all know. How to get the patient on the centre line? Haul and strain? Ask him or her to move two inches to the right, and then perversely have them go two or three inches to the left? To facilitate easy positioning, the table top should be regularly waxed with some good brand of floor polish. Over this a draw sheet that is made the same size as the table top is thrown. The proper cone is inserted under the tube and then the cone is dropped to about five inches above the part to be rayed. Get a grip on the draw sheet and having the patient lie perfectly inert, pull them where you desire. It is then quite easy to see whether or not the patient is properly centered. After which the tube is put back up on the stand to the regular working distance.

In the x-raying of skulls, a yard stick is a very handy article to have around for determining angles and where the central ray should pass through.

In P.A., A.P., and Lateral views, determination of where the upper edge will come on the top of the plate is easily shown by laying the ruler flat, touching the vault of the patient's skull and carrying it through to the plate on the open bucky tray.

Another curious use for the ruler is cowing unruly small patients, though many times we would be tempted to use same as a means of chastisement. Often a crying child, having a chest taken, can be scared into quiet by giving a table top a good lusty whack with the yardstick. And at that instant, step on the old exposure button and it is a fair chance that you get it without movement.

Suggestions About Markers

In the matter of wandering markers which so easily get lost, if the marker is cemented on a piece of celluloid, 1" x 1½" x 3/32" or even on thin plastic buttons (use celluloid cement as supplied to model makers), there is less chance of them being misplaced. If they fall on the floor, you hear them land.

*Summary of a paper presented at the 9th Annual Convention of the Ontario Society of Radiographers, Toronto, 1944.

See if you can figure out how it was done; then turn to page 68.

To identify various technicians in an x-ray department, if a small hole is drilled through the right and left lead markers, the Radiologist can tell at a glance which x-ray operator took the exposure, sometimes to his or her credit and sometimes not.

Markers can be made in an emergency from solder which comes in rolls and is about ⅛ inch in diameter. It is quite easily bent into shape.

Red Flashlight in Fluoroscopic Room

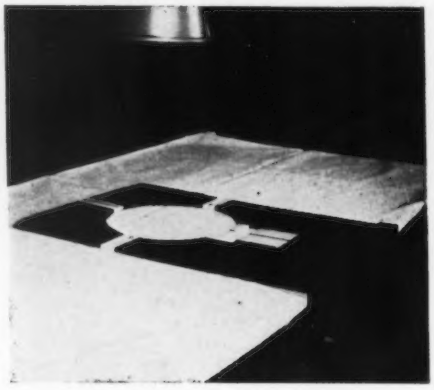
Four or five thicknesses of red cellophane over a flashlight help greatly in the fluoroscopic room.

Holder for Barium Enema Tubes

Most of us are not very fussy about barium enemas with their resultant soiling of floors, tables, etc. The rubber tube from the enema-can may be firmly held after use by attaching snap clothes peg, jaws up, with adhesive tape to the upright support. This prevents the enema tip from spraying barium wildly in the breeze. Even with the tube shut off, sometimes sufficient barium is left to make some mess on the floor.

Lead Diaphragm for Gastric Work

A lead diaphragm with a 10″ cut-out is very handy for gastric work, if table is not so equipped for centering the stomach. Procure a piece of tempered masonite or bakelite the width of the x-ray table, about 18″ wide and about ¼″ thick. Also a piece of 1½″ angle iron 18″ wide and some flat copper rivets. Sheet lead 3/32″ thick is attached to the masonite by means of linoleum cement. When the lead and fiber seems strongly cemented, the



work of cutting out the ten inch hole can begin.

The two united surfaces are put on a flat work bench and proper determination is made where the centre line is going to pass through the masonite in relation to the x-ray table top. A piece of wood 15″ x ¾″ x 1½″ is next procured. A 2″ nail is driven through this piece, about 2″ from its end, carrying on through the centre point on the masonite. Five inches from the first nail another 2″ nail is driven which has been previously filed to a sharp "V" edge, only about ⅛″ of this nail protrudes below the stick. Now give same a turn once around and bear down slightly and you will find you have cut a circular groove in your material. Keep on bearing down and turning, occasionally giving the cutting nail a tap. It won't be long until you can cut through the two surfaces cleanly. Next drill three or four holes in the outer edge of the masonite and rivet one side of the angle iron to the same. This gives you a mask which can be easily slipped under patients and helps to put the barium-filled stomach in the centre of a 10″ x 12″ cassette where the exposure is made with bucky.

Useful Angle Block

A right angle block (Fig. 1) is another useful accessory in the department. Nail two pieces of pine 5" x 10" x ¾" to form a right angle and then wire or nail a 5 lb. square iron weight into the corner of the wood. Rubber feet can be put on one side so as not to slip on the table top. This angle block is very handy for steadying ankles and wrists and elbows. Its weight gives considerable stability.

Cleaning Emulsion from Old Films

Old or discarded films are used on Hospital Wards for a multiplicity of purposes. The easiest method of cleaning the emulsion off is with the use of Gillett's lye,* about two tablespoons to three gallons of hot water. This causes the emulsion to strip from the film support beautifully, but caution must be exercised in the handling of the wet film base as the lye is very hard on the hands and clothes. Use a pair of rubber gloves and use lots of rinse water afterwards. The film can be dried with a clean towel right away.

*Editor's note: We suggest Sodium Carbonate as being equally effective and not dangerous.

Films Needed in a Hurry

Dip one inch of the upper end of snap clothes pins in various coloured enamels and let dry. These are very handy for identifying different lots of x-rays in the wash or dryer which are liable to be referred to in a hurry by the doctor.

Keeping Towels in Place

Keeping the dark room towel in place is another annoyance. It is generally on the floor when you want it, or dangerously near an open cassette when it should not be. To overcome its wanderings, put a fairly heavy screw eye in the wall, bench, or door, in which has been inserted a piece of awning cord. The two loose ends are knotted together and all one has to do to keep the towel in place is make a double half-hitch, place corner of cloth and pull down. The towel will stay put. When you are in one of those hectic rushes which hit most of us at certain periods, you just grab the upper part of the towel and as you move out of the dark room your hand passes down to the bottom of the towel and is dry.

Time and Temperature Readings

At a glance, time and temperature markings can be read if same are painted on the safelight over the dark room tank.

Film Marking With Pencil

During the chest clinics where many films are going through, it is wise to identify the film doubly, once by the serial number and again by pencilled writing on the bottom of the emulsion.

This is not a new way of identifying films, but if the writing is made with a

piece of soft cardboard under the film, the pencil writing develops out very black, due to abrasion of the emulsion and not from the lead pencil writing alone.

Dental Examinations

Full mouth dental x-rays (14 film examination) are somewhat of a poser when it comes to mounting them, for the new technician. Glue an old dental mount on a piece of cardboard, and as the various films are taken they are put in the open spaces until the full set of teeth is x-rayed. Do not disturb the sequence of the dental packets and take into the dark room and load on hangers. Final mounting of films is quite easy then, when they are dry.

Some Suggestions

The following suggestions were advanced at the last meeting regarding some things the technician would appreciate from the manufacturers of x-ray equipment.

1. Some sort of sighting device with optical lenses and cross-hairs which could be attached to the tube or cone for determining whether or not you are directly over the part being rayed and also the amount of field being taken in.

2. Washable surfaces on the cardboard film holders, with cross lines printed on both ways and clips that stayed closed.

3. Some method by which the film in the metal cassettes would spring up one corner away from the screen when the holder is opened. So many screens are ruined by "digging" for the film with the finger nails.

An X-ray Amusement

Last of all I present for your amusement a little x-ray variation from the usual run of exposures. Many weird and wonderful designs can be made by rolling or folding an unexposed x-ray film in three or four thicknesses of black paper so it will be light-tight. Put this cylinder of film under x-ray tube and then across the rounded surface of the film, lay various metal objects, keys, rings, paper clips, etc., at different angles. Make an exposure as for a finger x-ray and when the film is developed you will find you have a repetition of design for the number of thicknesses of film you have rolled up underneath. This stunt serves no useful purpose and is merely mentioned as a novelty. (See Frontispiece.)

Some Principles of Radiography

By FRANK DREISINGER.
Montreal

There are two channels through which the technician works in securing a desired diagnostic radiograph of any patient: I, Technical, II. Psychological.

These two channels, Technical and Psychological—by the means of which the technician deals with the patient, are fundamental and essential to the production of good film The majority of poor films that are obtained are due to some deficiency of one or both of these factors.

Technique:

As the science of Radiography has advanced it has become increasingly clear that "exposure by guess and development by the grace of God" cannot achieve results that modern equipment is capable of producing. There is no arbitrary combination of Ma., and Kvp. that will give the optimum result on every patient. There is no measuring stick or slide rule that will compute ideal exposure values—in some cases the caliper will lead one "far astray." However essential they appear to be, they will never replace individual skill and experience. The development of the Technique chart as a baseline from which to work is, however, one of the first requisites to the efficient operation of any machine. When the chart has been completed, the factors, employed for individuals of average size and tissue opacity, should be thoroughly mastered. It should be unnecessary to consult this chart every time a patient enters the department.

The object of every examination is to obtain a diagnostic radiograph with as little discomfort to the patient for as short a time as possible. Here, organization in application of your technique plays a major role. All movements necessary to this examination should be carefully studied and co-ordinated. For example, some of these movements would be — placing the patient in proper position on the table — inserting a film into the tray — applying markers — turning on machine — cocking the bucky and positioning the tube. The inexperienced technician, if he allows himself to become "involved" in these things, will work himself into a perspiring frenzy over them. Instead the technician should always strive to reduce these operations to a mere ritual which involves the fingers but not the mind.

Timing:

Frequently the technician is called upon to examine comatose patients. When such patients have been postured as comfortably as possible, they usually do not change position. However, they must breathe and their respirations most always cause movement — particularly if the chest or skull is being x-rayed. Co-ordination and "timing" is invaluable and often spells

*TECHNICAL SERVICE DIVISION — Picker X-Ray of Canada, Limited.

the difference between a successful examination and wasted effort. When fractional second exposures are being made of the chest in 1/20 or 1/10 of a second and of the skull up to half a second there is a time when no movement of these parts occurs due to respiration; no movement of the ribs — at inspiration; no movement of the skull — at expiration. The experienced technician, and experience comes from practice, will learn to anticipate these times and make the exposure at the precise moment.

Another aspect of our discussion in connection with technique is posture. Correct positioning requires not only a knowledge of the various anatomical structures but their relationship to each other. Without this knowledge, proper angles of exposure cannot be used to demonstrate them. A diagnostic film cannot be taken of the maxillary antra without knowing the location of the petrous bones in relation to the antra. Text books and instructions may teach the technique of posture to cover most average patients. However, some patients do not fall into this class. The anatomical variations of the human body are infinite. One of the interesting features of our work is the necessity for expression of initiative and versatility in dealing with the many postural problems of human beings.

Psychology:

Technicians have been gazing for a long time with hypnotic absorption at this electrical wizard — the x-ray machine. Let us now lift — or lower our eyes for a moment and consider what is under the tube — the patient. It is the duty of the technician to secure the desired response from the patient. The best result cannot be obtained unless this contribution on the part of the patient is secured. It is a curious psychological quirk that some patients, while on the table, will eagerly absorb praise that would be laughed off as pure flattery under any other circumstances. Men are usually resentful of too much ceremony. They have come to be x-rayed and while willing to co-operate want to arrive at the main problem with as little fussing around as possible.

Development of the proper mental attitude may be difficult if the radiographer is obscure or vague in his instructions to the patient. We may have a clear conception of what we want but we must, for the benefit of the patient, take particular pains to put our desires into clear, simple and consistent terms. Unless care is taken on this point the impression is given that we are not quite sure what we want to accomplish. In the first place the technician should know and should show that he knows, what he is doing. If he is uncertain he should never let the patient suspect this fact. At the first sign of uncertainty, vagueness or fumbling, the patient begins to lose confidence in our ability to competently examine him.

Tact and Consideration:

To realize the best possible results the technician must be a subtle diplomat as well as a person of human sympathy — he must be capable of simple kindness as well as Machiavellian stratagems. A practical knowledge of symptoms of ailments is very important to a consideration of and sympathy for the patient. For example, knowing that a patient with an 8th nerve

tumour will become dizzy when his head is lowered for a "Base"; understanding the mental processes of the spastic and athetoid, many of whom are very intelligent even though unable to speak; sympathy for the fracture case when even the slightest movement causes extreme pain — it sometimes being easier to move the tube to take a lateral view of a fractured arm than to rotate the arm.

It is an act of simple kindness and consideration to have all exposure factors pre-set before sitting any patient on the side of his bed for a chest film. It is an act of consideration for the patient to occasionally get on the table and assume some of the positions used to examine him. It is an act of simple kindness to appreciate some of the fears of the apprehensive patient who is suddenly confronted for the first time by a maze of wires, switches and control panels. A few moments of explanation and reassurance will frequently dispel any of these fears. Do we ever ask ourselves when the patient has left the room — did I get the most out of my patient? Do we ever ask ourselves when we see the film — did I get the most out of my machine? The patient is waiting! The machine is ready! The rest is up to you!

Try Again!

By A. PERRY, Halifax, N.S.

When things go wrong don't think that all your work has been in vain,
Perhaps it's all been for the best—so smile—and try again.
It may be that your failure proves to be the magic door
That leads you to a happiness you never knew before.

You may be weakened in the fight, but not defeated, yet
It's no use wasting precious time in tears and vain regret.
Stand up and face the world again, and, if you keep in view
The high goal of your greatest hopes, your dreams will all come true.

Draw wisdom from your old mistakes
And courage from your pain,
And then some day you'll say, "Thank God,
I dared to try again!"

The Physical Bases of Chest Radiography

By SISTER MARIE LAFORCE, s.g.m., R.T.,
General Hospital, Edmonton, Alberta

There is a wide divergence of opinions as to what constitutes chest radiography of good quality. Some radiologists prefer a film of medium density, others of heavier density. However, all agree that the principal problem in this field of work is the production of greater sharpness of detail with sufficient or suitable contrast, so that the radiographic image will provide more exact information about respiratory and cardiac processes. Detail, that is, the sharpness of lines and contours, is governed mainly by the physical conditions existing during the exposure, such as focal-film distance, object-film distance, voltage, milliamperage, exposure time, movement of the patient, properties of the x-ray tube.

1. Focal-fi'm Distance—A distance of 72 inches is considered the best if your tube can deliver 100, 200 or 300 M.A. At 6 feet practically all distortion and magnification can be avoided, and a larger focal spot may be used. Noticeable variations in the size of the chest image arise from the extent to which the patient fills his lungs on inspiration. Good chest radiographs have been obtained with 10 and 30 M.A. at a distance of 72 inches. The greater the distance, the less the distortion. With mobile units, chests sometimes have to be taken at 25 inches when the patient is unable to sit up or to be propped up in high-Fowlers. In this case distortion is unavoidable.

2. Object-film Distance—This should be the smallest possible to avoid distortion, magnification and unsharpness of definition. In the case of very sick patients, it is advisable to insure proper object-film distance with the chest band.

3. Voltage—The lower the voltage, the better the contrast. If a tube can deliver 200 or 300 M.A., it is easy to get good contrast by using low Kv.P. Not the maximum but sufficient contrast is desired in chest work. Too high contrast must be avoided, as some parts of the film would be too hard or too light and therefore little or no detail could be seen. It has been found preferable to use a low Kv.P. and longer exposure as well as longer processing time to obtain better contrast.

4. Milliamperage—To secure the best definition in chest radiography, it is best to operate the focal spot at or near its maximum rated capacity. Probably the principal value in the use of the higher milliamperages is the higher contrasts obtainable by the employment of low Kv.P. It might be well to note that the life of your tube is prolonged by 20% if the focal spot is operated slightly below its rated capacity.

5. Exposure Time—Movement of the Patient—Properties of the X-ray Tube—The trend toward short exposures is aimed principally at minimizing the blurring effect of the movement of the

lung tissues with the heart action. No one exposure is clearly the best. For any set of exposure conditions, the focal spot is to be the smallest whose rating is adequate for routine chest x-rays. An exposure time of 1/20 seems to be the most suitable as it permits the use of a small focal spot, thereby giving better sharpness in the more slowly moving portions of the lungs. If the power of the x-ray machine is limited to 100 MA., the preferred technique is 1/10 second at 100 MA. with Kv.P. adjusted to the size and type of patient. If the machine can deliver 200 MA., then it is preferable to use 1/20 second exposure time. This technique will produce greater contrast and sharpness in the faster moving portions of the lungs. Stationary portions of the chest such as the peripheral lung areas and posterior ribs will not be quite as sharp as with the 1/10 second technique, but the difference will be too small to be noticed. If 300 MA. is obtainable from your machine, 1/30 second may be used, resulting in somewhat improved sharpness in the fastest moving parts of the lungs. The stationary portions of the lungs, however, will be perceptibly less sharp than with the 1/10 second exposure. The lung movement in the peripheral portions of the chest is small. With rapid heart rates a great amount of motion exists in the lung tissues adjacent to the apex of the heart. Therefore, it is impossible to select a single exposure time that will produce the best image sharpness over the entire lung region. The procedure would be simplified if the radiographic exposure could be synchronized with the heart cycle and taken preferably at the end of a dyastole.

The main factors that affect the quality of the radiograph seem to be:

1. The immobility of the patient.
2. The depth of inspiration of air into the lungs.
3. The phase of the heart cycle into which the exposure happens to fall.

For comparative purposes in serial examination it is quite important that the same factors be used at every examination. For this reason it is best to adopt a standard procedure and technique based on caliper-measurement.

In this x-ray laboratory, the technique found to be the most satisfactory is 200 MA., 25 MAS., 72-inch distance, with 55 Kv.P. for a chest measuring 17 centimeters, increasing 1 Kv.P. for every additional centimeter thickness.

When this technique was adopted we took into consideration the type of patients expected at this clinic. A great number of the patients reporting for examination have perfectly normal lungs. Many others are ex-San. patients with a lesser or greater amount of fibrotic tissues, calcifications, spontaneous or artificial pneumothorax, thoracoplasty, tubercular lesions, growths, pleural fluid, etc. This accounts for our using a heavier technique than that ordinarily employed for routine chest examinations.

High quality chest radiographs cannot be obtained with old processing solutions. Your developing bath might still be good for bone work but not for chests, hence the necessity of changing your chemicals often.

The Discovery of Barium Sulphate
as a Radiographic Opaque Medium

By FRANCES SHAW,
Calgary, Alberta

Early in the year 1896, the year following the discovery of x-rays, a Professor Bowditch suggested to one of his students, a man by the name of Connor, that it might be possible to use the newly discovered x-rays to study the alimentary tract. As is well known, x-rays in the beginning were used merely as a procedure in research and not for diagnostic purposes as now.

The whys and wherefores of the process of digestion were of great interest to the pioneers in the study of the gastro-intestinal tract. The well known experiments on rabbits, cats, etc., and even on man, were not very accurate because of the irritation which often disturbed the essential factors, and frequently distorted the process of digestion. One can readily understand this because the surrounding tissues dried very quickly when exposed to the air, and even when the incision was immersed in a saline bath there was still a great deal of irritation from the presence of a foreign body such as a rubber tube or a metal canula in the gastro-intestinal tract. Consequently it was not until x-rays were used that any very satisfactory observations were made in this study.

Just as the use of our iodized oils as opaque media started from an accidental discovery, so the use of bismuth in outlining the gastro-intestinal tract was accidental. Its presence in a patient to whom it had been administered as a medicine was seen by an observant person and its possibilities realized. It is an interesting point that our present day iodized oils started from a piece of burnt sponge containing iodine being seen on a radiograph. This incident was studied and developed by a Frenchman whose name still gives us Lipiodol by Lafay.

Bismuth was used as a medicine for many years before it was used as an opaque medium in x-ray work, so that it was well refined when first used in radiographic procedure. A pioneer in both medical and radiographic work tells me that in the days before we had drug stores on every corner, and when the doctor did his own dispensing, his standbys in the way of medicines were a tub of bismuth on the table and a barrel of mag. sulph. in the corner, both of which were dispensed very generously.

For examination of the oesophagus the bismuth was mixed with coco butter into a capsule-shaped pellet about one half by three quarters of an inch in size. This was put in a cool place to harden and then given to the patient with a few sips of water to aid in swallowing it and its course down the oesophagus studied under the fluoroscopic screen. Mr. Hoare tells me that if the technicians to-day think they have trouble persuading the odd patient to drink "a nice glass of barium" they should have coaxed some of the patients in those days to swallow the above mentioned pellets.

For examination of the remainder of the gastro-intestinal tract the bismuth was administered in either a dish of cereal or a mashed potato mixture known as potato pap. The patient was given from an ounce to an ounce and

a half of bismuth mixed with from six to eight ounces of either the cereal or the potato pap. This meal was eaten with a spoon and its progress through the gastro-intestinal tract observed in a crude way, but similar to the examination of to-day. This method was used in 1900 and continued to be popular up to about 1913 or the early months of 1914.

In 1914 bismuth was replaced by barium sulphate, the reasons for its replacement as an opaque meal being several, two of the most important being cost and scarcity. Then, as now, there was a scarcity of labour and as its mining and refining involved a great deal of work it was hard to obtain and very expensive, its cost per pound in early 1914 being as high as fifteen dollars. Then, as to-day, war demanded many chemicals and the war of 1914-1918 required bismuth in the manufacture of munitions. In 1914 bismuth was not extensively mined, the main sources of supply being distant points such as Southern Australia, Bolivia and Sweden. Then, too, and probably the most important factor, it was discovered by research workers to be quite toxic to some patients, especially to the mucous membrane of the large bowel, so a substitute had to be found and barium sulphate came into use.

Both in America and Germany in the year 1914 the use of barium sulphate was established. Unlike bismuth the barium or barytes crystals are found nearly all over the world. They are found mixed with most other minerals and quite commonly in veins varying from a few inches in thickness to many feet, the mining and refining thus being a great deal less expensive, barium being available from eighteen to twenty cents per pound as compared with fifteen dollars for bismuth. The most extensive use of barium is in conjunction with white lead used in the manufacture of paint. It is also used to dress cloth and leather and next important is its use in x-ray work.

In passing it is interesting to note that the word Barytes is derived from the Greek word Barus, meaning heavy, which points to the reason for its opacity to x-rays.

The crystal form in which it is found is quite pretty as it is generally of a nice pinkish hue. The crystals are crushed, washed to remove dirt, steam boiled with sulphuric acid to remove any impurities, kiln dried and then reduced to a very fine white powder. In the early months of 1914 when barium was first being used as an opaque meal it was necessary to start preparation of the meal one whole month before it was required. It was put in a large container and stirred and skimmed each morning to remove any impurities present and at the end of the month was considered fit to be given to the patient. The barium we buy to-day in addition to being chemically pure, is given a further fluffing process to help keep it in suspension so that to-day there is very little effort required in preparing a barium meal; you simply add water and mix it well. It is no longer necessary to administer the barium in buttermilk or other media as most of the barium sold for radiographic use to-day is nicely flavoured and is quite palatable.

The writer is indebted to Mr. E. S. Hoare of Calgary who so kindly gave her the benefit of his nearly 50 years' experience in x-ray work in the preparation of this article. If any readers have further details regarding our commonest opaque medium the writer would esteem it a personal favour if they would communicate with her.

Angular Roentgenography of the Pulmonary Apex*

Vizualization of the pulmonary apices has been more or less a technical problem in chest radiography. There are several anatomical structures overlying this region that cause a decrease in contrast and obscure certain areas. We all know that the shape of the chest varies with the individual. Tall, thin asthenic people do not present the technical difficulties encountered in the short, thick set patient with heavy musculature.

The chief object in obtaining satisfactory detail films of this area is to project the clavicle and rib off the lung field. Several techniques have been described in the literature, some of which sacrifice detail for position.

In tuberculosis work it is important that the radiologist confirms the presence of small cavitation and with this in mind, the following technique has been found practical.

Distance, 36 inches, half of routine.

Time, half of routine.

Other settings, no change. Tube tilt 35 degrees up or down.

Tube is always centered on the apex of the lung, shifting it down for the uplift, and for high, the opposite tilt.

Theoretically the advantage would be:

(1) Tilting the tube down displaces the clavicle upward; likewise the opposite tilt shifts it down.

(2) Magnification of the structure because of the shorter tube-to-patient distance.

(3) Separation of the first five ribs because of the oblique view; thus visualizing more lung parenchyma.

(a) This technique is of greatest value where lesions in the apex are poorly defined on the flat plate, because they are hidden behind the ribs or clavicle.

(b) It is of some value in studying apecal adhesions.

(c) It may be used in place of the stereoscope for determining the anterposterior location of a lesion.

*National Tuberculosis Association Journal, 1939.

A Quarter-Century Technician Reminisces

ANONYMOUS

Quite recently I attended an x-ray technicians' meeting and being early, found the lecture hall but dimly lighted. My hair is grey and as I sat down an indignant voice from across the room said, "You can't come in here, this is an x-ray technicians' meeting." The speaker might, by stretching a few years, have been my grand-daughter, and it struck me how much everything had changed since I started x-ray work.

Like most of my generation, my training was largely empirical, for many of those with whom we worked knew little more that we did, and sometimes less. I began with gas tubes and shall never forget the awful feeling of dismay when one turned a marvellous shade of purple instead of the beautiful apple-green colour with which I was familiar. As far as I was concerned my budding career as a radiographer might have ended then and there. Since then I have progressed by slow and oft-times painful stages, until I attained the rotating anode tube. Probably my youthful friend of the technicians' meeting started with that and knows no other. And so, because so many interesting, funny and sometimes tragic incidents went to acquiring the little knowledge I have, perhaps it might be of interest to hear something of my long years of training.

Darkroom work came first and needless to say, glass plates. There were no such easy methods of making solutions as prevail now, and many an anxious moment I spent measuring and mixing and testing temperatures. But the reward came in seeing an apparently blank sheet of glass or film blossom into a wonderful picture. (You will notice I make no mention of the times they remained a blank or showed what looked like a futuristic picture, the result of a double exposure.)

My first attempt at taking a radiograph came unexpectedly when I was alone in the department. This was in the days of gas tubes. With wonderful self-control — and knocking knees — I set up the patient (a wrist case), started the machine, tested the tube and made the exposure. Nothing can describe my elation in finding that I actually had a picture on my plate.

The fluoroscopic screen has never lost its interest for me and many ridiculous incidents took place in the dark. I have always thought that most people either do not hear well in the dark or else lip-read more than they realize, for I have heard some funny conversations before the screen. One patient, a young girl sent for a chest examination (long before the days of chest clinics) was sure she must be very ill if an x-ray was necessary and was very frightened. The Radiologist was trying to get some family history and asked if her father and mother were living. The patient said, "No." "What happened to them?" She hesitated for some time, then "Well, they died."

Another patient had been asked many questions and then came to one about his weight. "Have you lost weight

recently?" "Yes." "Much?" "A few pounds." "How much do you weigh now?" "132 lbs." "What is the most you weighed?" "145 lbs." "And what is the least?" A very long pause and then in a dry tone of voice, "7½ lbs., I suppose."

To return to the darkroom. Some years ago we were using a new type of developer. Our department was old, without a basement, and underneath the floor was a maze of wires, etc. This was one of the favourite spots for stray cats to lie up in, sometimes with disastrous results, and then the workmen had the unpleasant job of bringing out a highly odoriferous corpse.

Solutions were prepared at night and on the following day the darkroom smelt to high heaven. At once I called the porter, whose ideas of cleanliness did not always coincide with those of the staff, and to his disgust made him clean out every corner and scrub the floor, even going so far as to make him take up the old and torn linoleum and clean beneath it. But still the smell persisted. Then the plumber was called and after much argument, consented to clean out the drains. And still we smelt. So someone went under the floor and discovered a couple of dead cats. By this time the smell had gone and it was not until we heard of the experience of the neighbouring hospital that we realized the cause of the trouble. In that case a new pupil had been entrusted with making the solution and because of the smell, they decided a mistake had been made and the five gallon tank was emptied and another lot mixed.

As most technicians of my age know, the x-ray department was usually situated in any hole or corner available, with no idea of time or labour-saving devices. In one hospital the darkroom was the whole length of a corridor from the radiographic room with the O.R. between; in another on the next floor. One of them was in such a spot that in winter we actually slipped around the icy floor and at all times had to stand on boards to keep out of the damp. Many a time I have broken the ice on the water tanks. Complaints to the heads of the hospital were of little avail, but being "on call" one Sunday and told to take a film for the convenience of a member of the Board, my chance came for action. It was cold and the radiographic room heated by one tiny radiator, like a vault. Gathering up chairs and blankets, I made a nook with an electric heater in the centre and ushered my patient in to disrobe. He made no comment except to ask if the department was always so cold, but within a month our heating system at least, was improved.

In this department, a previous radiologist had tried out a great many of his ideas about improving equipment, etc., and the fluoroscopic room was a maze of electric wiring with switches all over the place. These were never touched by the staff but in the days of which I write, the Interne on night duty always wanted to do any x-ray work necessary, sometimes with fearful and wonderful results. One morning the staff came on duty and found the "juice" was off. The electricians could not find the cause of the trouble and only after one of the service men (our great friends and helpers) had spent all day with us, did we find that our bright young Interne had turned

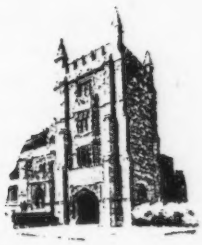
a few switches the previous night but had no idea just which. On another occasion the Department was almost out of commission for a day but fortunately not from the same cause. On April 1st, some wag among the doctors affixed a large red sign on the outer door, "Danger! Keep out!" This was only discovered when both doctors and patients refused to enter.

In those days we did a great deal of emergency (?) work at night and it was not uncommon to take wet films to the O.R. and leave them there all night. Once when collecting these the following morning I found the zealous night nurse, having heard that the films should be washed, had placed them under the water tap. Unfortunately the water happened to be HOT.

In my day I have taken films on both animate and inanimate subjects. Among the former, in addition to our human patients we often had dogs, and once a cat. The latter included the post-mortem cases. The only time I really objected was when called on to take Accessory Nasal Sinuses on a Boston Bull. Occasionally an interesting and unusual condition was discovered after death and as our enthuiastic Radiologist always wanted films taken it led to many situations, which strange to say, i.e., to laymen, were sometimes very funny. I have never forgotten the time Freddie (now an eminent Pathologist) found me using all his valued books as supports on which to rest cassettes and limbs. Does he ever think of those days?

There are always differences of opinion as to the length of time necessary to train an x-ray technician, but even those who advocate shorter courses may be amazed to know that once we were asked to train a nurse who proposed to spend a week with us and another in the Pathological Laboratory, before proceeding to a small hospital where she intended to do x-ray and lab. work in addition to nursing.

The younger generation of technicians probably never runs into the funny situations we did, but I am sure there is still plenty to keep them amused and interested, even if hospitals are more and more standardized. One thing they should keep in mind, and it is difficult when every one is as busy as to-day, people are still human and each is sure that the condition for which he is being examined or treated, is unique. A few minutes to pacify a nervous patient and get co-operation is not wasted time — it often saves a repeat film — and the patient never forgets "how kind the nurse was."



The Cruise of the Lady Anderson

By CLARENCE ROBERTS,

Grace Maternity Hospital, St. John's, Newfoundland

In 1936 a Tuberculosis Survey was made by Dr. R. E. Bennett, Medical Superintendent of the Sanatorium at St. John's, Newfoundland. The region was the southwestern coast of the island, rugged and indented with countless coves and bays. The medical needs of the scattered population were looked after by a doctor and two nurses travelling by hospital ship and on their previous trip west they made it known that on the return trip a Tuberculosis Specialist would make a survey and x-rays would be taken. This is where I entered the picture, being so fortunate as to be asked to go along as technician.

In St. John's we got together our supplies of films, solutions, hangers, dark-room light and had solution tanks made with screw-down covers in preparation for rough seas, which we got later on. We crossed the island to Port-aux-Basques by train early in August and met the hospital ship and the x-ray apparatus which had just arrived from Toronto. The x-ray was a portable unit designed for the Public Health Department of Toronto for their travelling clinics, and this was most certainly the first time one had gone to sea.

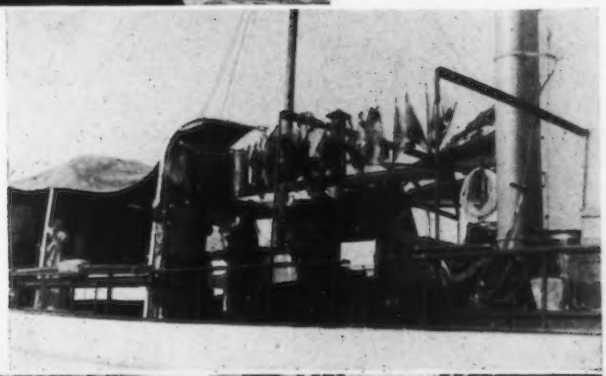
The apparatus had to be assembled in a small deck house at the stern of the ship. The case housing the control panel was placed in front of a door opening on the stern rail, and the case from which the high tension wires went to the tube had to be put alongside of, instead of in front of, the controls to give the proper focal-film distance. This arrangement proved dangerous later on, but was unavoidable.

The dark-room was a converted bathroom below deck and in the extreme bow cabin. It was just big enough to get in and pull to the door behind you. Fortunately it had running water, but of a limited quantity, and a small shower tub about 14" x 14" in which I washed the film. From the x-ray, along the deck, down the companion way to the bow cabin was quite a distance, but there was always lots of willing help to carry the cassettes back and forth.

To complete this rather unique setup, I had to walk along the deck rail to get to the stern door through which I reached the controls, while having hardly enough room to stand on the deck. While x-raying, the back door and the front door were open and in wet or foggy weather everything got quite damp. And so it happened one day while at the controls a spark jumped from the high tension to my right hand and out through my left elbow to the brass door knob. I still carry the scar and will never forget the scare I got.

*Since the survey with which this article deals, made nine years ago, conditions have changed and "Cottage Hospitals" serve many districts and isolation and lack of medical facilities is gradually becoming history. We hope in a subsequent article to describe something of the Cottage Hospitals and survey work of the Mobile Avalon Health Unit.

Left—The "Lady Anderson" showing the author with the x-ray button ready for action and the x-ray equipment.



Right—Patients waiting on deck and films out to dry.

Above—The author making the hazardous journey to make the exposure after positioning the patient.

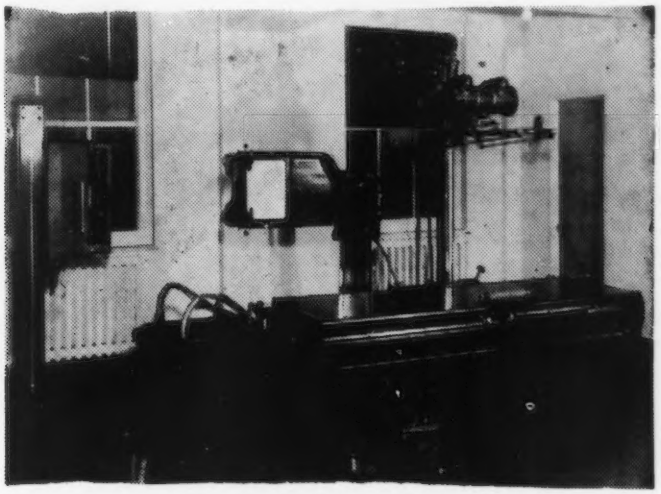
Right—The x-ray room and equipment.

Being marooned on the stern rail I was out of touch with the patient who was positioned by a nurse, and having no measure for body thickness I gave each patient a long appraising glance, set the penetration accordingly and hoped for the best. I was never closer than eight feet to the patient. The films had a very cursory washing. The water supply being so limited they really got a slow dunking instead of a thorough wash. While in port, in calm weather, we hung the films on lines on deck by means of safety pins to dry. It is interesting to note that all of the ship's pumps and electrical apparatus had to be shut down to give enough steady current for the x-ray.

The trip was a most interesting experience from start to finish. We experienced a storm at sea, as well as beautiful autumn weather and narrowly escaped serious damage when a schooner ran into our bow while we were at anchor. There was also an occasional meal eaten on the bank of a fine salmon or trout river far from the noise of the city. It was actually as much holiday as work-a-day, steaming from port to port in a hospital boat which was formerly a pleasure yacht. The entire ship's company was congenial and it was a most enjoyable change from hospital routine. The apparatus was new and unfamiliar, the set-up inconvenient, and the dark-room facilities were inadequate, but those factors only tended to strengthen our desire to get good results. This we achieved and a very useful survey was completed.

MAY WE DIRECT THE ATTENTION OF THOSE NEEDING THE SERVICES OF TECHNICIANS TO THE LIST WHICH APPEARS ON PAGE 98.

News Clippings



View of one of the Major X-Ray Rooms showing a 500 M.A. X-Ray Unit.
(Daily News Photo)

Hospital Wing Now Completed

St. John's Newfoundland, Dec. 30, 1944 —The construction of the central block of the new west wing of the General Hospital has been completed. Its occupancy is unavoidably delayed due to lack of furniture. This completed portion consists of all the essential services requisite for the complete institution, together with accommodations for private, semi-private and ward patients.

The first floor contains all the facilities for administrative purposes, namely: entrance, information booth, with waiting room adjoining as well as general office, record office, Superintendent's office, and an office for the director of nurses.

In a private corridor on the same floor is an ambulance entrance, with facilities for the care of emergency and all patients for admission. On this flat as well are the main kitchen and dining room that supply all the patient population of the hospital.

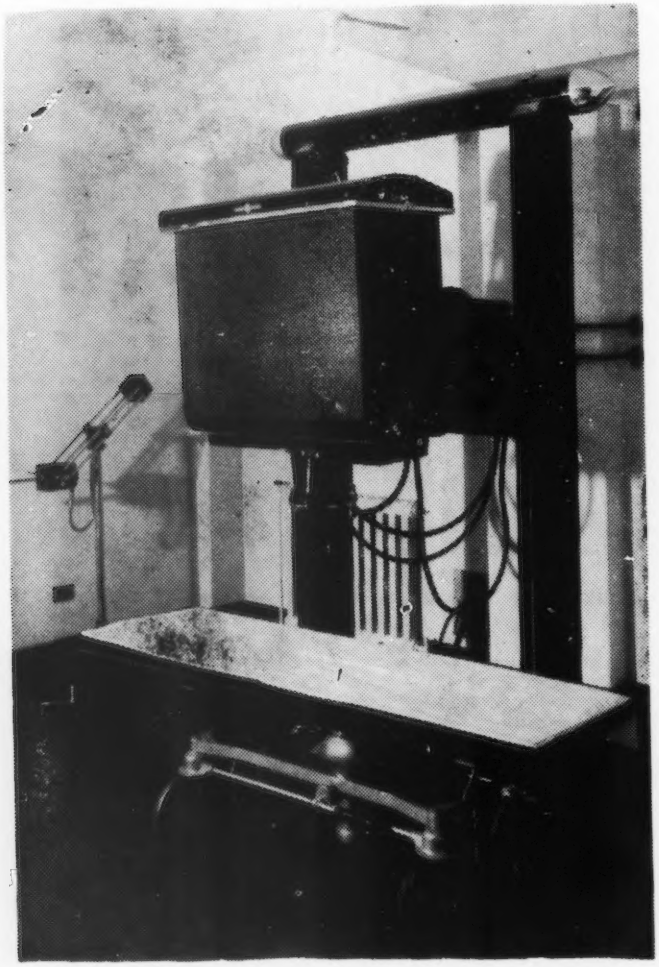
On the second floor is all X-ray equipment for radiography, superficial and deep therapy, electro, hydro and physio-theraphy together with accommodation for semi-private patients.

The third floor accommodates the surgical suite, which consists of two major operating rooms, a cystoscopic operating room, orthopaedic operating room and an operating room for eye, ears, nose and throat surgery, together with an operating room for general septic surgery. On this floor as well there is accommodation for private and semi-private patients.

The 4th floor contains a Solarium which at present can accommodate 22 patients. This floor contains as well, accommodation for psychopathic cases, with facilities for hydro-theraphy namely continuous and shower baths all thermostatically controlled.

The basement or lower flat contains mechanical equipment which consists of:—heating apparatus by remote control, central refrigeration for the complete institution, storage base for vegetables, a general grocery, patients' property, mattress storage, sterilizing equipment, pharmacy, record office, mortuary chapel, and autopsy rooms with facilities for embalming.

It is proposed to have the hospital fully staffed, and the Commission of Government have approved of the following:—one Superintending Doctor, twelve surgeons and nine others, a total of 24 doctors. A radiologist is also being engaged in the person of Dr. Bliss Murphy, formerly of the Toronto General Hospital, now in the R.C.A.F., but who has applied for his release through the Canadian High Commissioner, the Hon. J. Scott MacDonald.



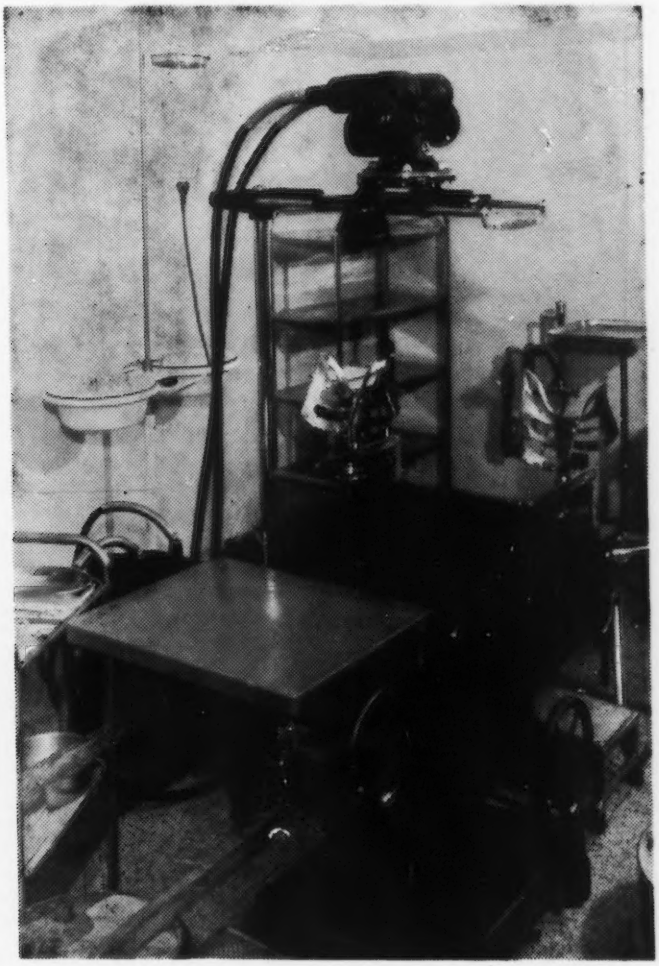
Deep Theraphy Apparatus. (Daily News Photo)

It is also proposed to have a pharmacist dispensing drugs. Probably this new set-up will extend to the different institutions under Government control over the Island. It is proposed to place in the new General Hospital an adequate supply of radium and Dr. Bliss Murphy will take charge of this new set-up.

The staff will consist of 55 fully trained Nursing Sisters, 100 Student Nurses, X-ray Technician, Dietitians, 2 Storekeepers, 1 Artificial Limb Maker and 2 Assistants, 6 Male Nurses, 5 Cooks and 57 Maids.

At the present time the average number of patients in the hospital is over 190 per day. When the new wings are in operation 224 patients will be added to this number and it is hoped to accommodate approximately 400 patients altogether.

One of the activities in a hospital which has grown during the past three or four years is that of Orthopaedic Surgery. Last year

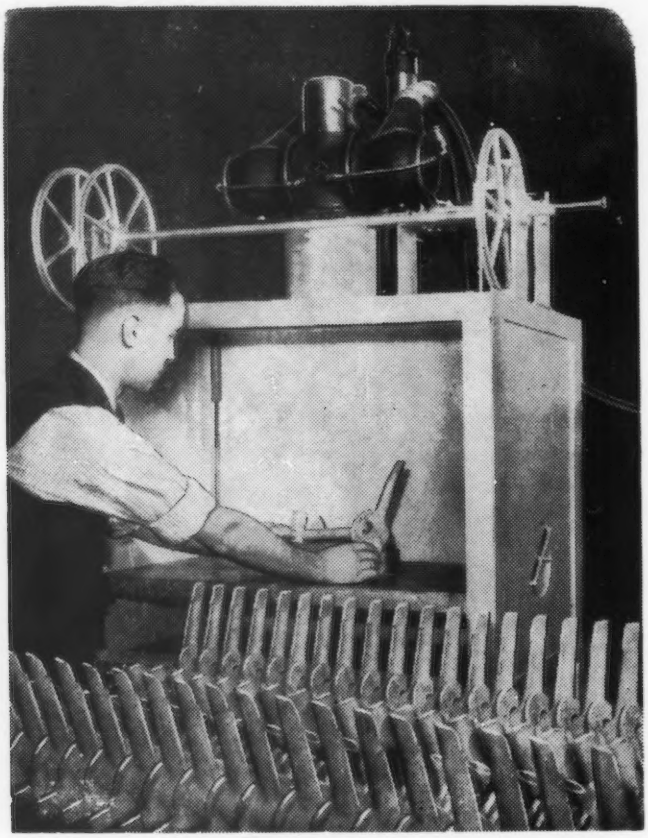


View of Cystoscopic Room. (Daily News Photo)

the number of patients being treated in this department was 52. At the present time there are 71 Orthopaedic cases and the field of patients for whom this treatment is necessary has not been covered. The branch of Cystoscopic Surgery has greatly expanded and in the last few years the General Hospital has had placed in it all the modern equipment necessary for this kind of surgery. To be added to these is the radium treatment with a trained Radiologist who will give his full time to radium treatment and X-ray work.

The erection of a South Wing and a North Wing to the central block is now continuing and it is hoped to complete both during the next two years. When all these erections have been completed a hospital that will be worth while will be in operation. Visiting doctors have stated that the new General Hospital will be equipped second to none in comparison with any hospital east of Montreal.

—The Daily News,
St. John's, Newfoundland.



Thousands of aircraft parts have been X-rayed by Hydro workers to ascertain if flaws are hidden inside the metal. Here Douglas Stovey is inspecting a batch of control column hand wheels made of magnesium.
(Globe & Mail Photo)

War Problems Solved By Hydro Technicians

Wartime dividends are being paid by a comparatively small group of little-known employees of Ontario's publicly owned Hydro-Electric System—all because they have spent many years making themselves known in their own highly technical world as just about the best group of researchers Canada has.

Canadian-built aircraft, ships, tanks, jeeps and whatnot are performing overseas better because of the skills that the 120 laboratory workers of the Ontario Hydro had available for testing purposes—skills plus the equipment. Almost since the war broke out the Hydro laboratories, on Strachan Ave., just above the eastern gates of the Exhibition Grounds, have carried a twofold load—testing war materials for the services and continuing the basic task of developing and testing materials and methods of providing more economical power with greater continuity of service.

Maybe there is no relationship between their zeal and the fact that Gen. H. D. G. Crerar, Canada's army chief overseas, was head of the lab more than 30 years ago when it had a staff of four. Nevertheless, the skilled technicians to-day are very proud of that little bit of history. And they are just as proud of the lab's record of having pioneered in hundreds of structural, electrical, mechanical and other developments, to such an extent that to-day it is often sent particularly technical tasks by such organizations as the National Research Council.

It all began with the birth of Hydro. Sir Adam Beck sold Ontario the idea of municipally owned power organizations with a

central productive system. Both for the central organization's benefit and the municipal units, but particularly the latter, it was felt that knowledge gained by the parent body should be shared with the smallest units. So Ontario Hydro set up a little lab.

Originally it was to test meters, because power was going to be sold on a meter basis. One thing led to another, such as testing light bulbs, which in those days were a very uncertain quantity, and soon the lab was doing all sorts of test tasks. In spare time it turned to solving problems. One of these developed when its present chief, dour, lean and whimsical Roderick Young, was asked to "learn all about concrete."

Young did. He had to evolve tests, both field and laboratory. His results were first tried out in a dam on the Mississippi River near Perth. When, a few years later, the huge Queenston project was launched, Hydro was recognized as probably the world's greatest authority on concrete mixing, placing and maintenance. To-day it is still considered tops in that field and its advice is often sought. Almost daily its huge special equipment is analyzing concrete samples from its many projects, crushing cores diamond-drilled from dams, analyzing new products and mixes.

But to-day the lab has much more than lamp bulbs and concrete to deal with. It fills an entire building of which it once had a small basement corner. It has 13 distinct sections, each dealing with specific problems. They range from testing linemen's rubber gloves to making artificial lightning to test resistors. It is still the testing laboratory for electrical appliances for Canada, though its former "Approved H.E.P.C. of Ont." has been replaced by a national organization's approval.

To a layman the lab is a puzzling place. Side by side are a curious, homemade contraption which methodically rocks back and forth, flopping several electric cords up and down, and a cabinet in which temperature, humidity and other factors are carefully adjusted while wire for navy ships is being tested. The electric cords are simulating what a housewife does in a year's ironing. The contrivance to which they are attached is termed a "gadget" by the staff; some day it will be dignified by the name "instrument" when somebody gets around to putting chrome on it and patenting it.

Many people in the lab have patents on instruments or methods. Hydro uses them without royalties. For instance, all over the world transmission power wires began snapping about the same time. Engineers were puzzled. They realized that all power company lines were about the same age, power extension having about paralleled in most countries. Lab researchers went to work, discovered the cause as metal fatigue when soft breezes, not heavy winds, set up a rhythmic vibration in the lines. Months followed before another gadget, which is now an instrument of sorts, was developed to deaden vibration. The inventor took out patent papers.

To-day the lab is busy on war work. For instance, 1,200 electrical resistors came in from the navy alone. every one subject to about 20 tests. Some of the tests are delicate and involved. The X-ray department is practically full-time on magnesium castings for aircraft. Bob Gemmell, veteran who served with Lord Kelvin for nine years, is devoting part of his machine shop hours to improving war instruments. Literally hundreds of war jobs are being carried on.

But the major task is better Hydro service, cheaper costs, more constant service. That's why Hydro has some ideas up its sleeve about refrigeration, better flat-rate water heaters and similar things. After the war the lab hopes to hit the jackpot with these. Just now, though, it's helping to win the war.

—Ken W. MacTaggart,
Globe & Mail, Toronto.

X-Rays to Foil Plastic Surgery as Nazi Disguise

Moscow, March 19—Soviet newspapers have been giving a lot of space to the possibility of post-war subversive activities by Nazis. They have speculated that Himmler's agents may seek the aid of plastic surgery to get permanent disguises.

One paper, for instance, tells how a graduate of the Brandenburg school of espionage had his face made over into the convincing likeness of a deceased Russian lieutenant and then spent a long sojourn in Moscow picking up the threads of the lieutenant's life. The Nazi's real personality was revealed, however, as the result of a blunder in his conversation with the lieutenant's suspicious fiancee.

Now the Russians believe they have an even surer method of unmasking Nazis who may resort to plastic surgery. It is a method resulting from a recent criminal mystery which was solved by the aid of a Soviet artist named Gerassimov.

Gerassimov, who is not to be confused with the well-known painter of modern portraits, specialized in the reconstruction of the likeness of bygone personages from data scattered in ancient literature and archeological sources.

The police had found the skull of a recently murdered man, but they were without clues as to his identity. A senior detective of the criminal investigation department thought of Gerassimov and applied to him for assistance.

Gerassimov took the skull to his studio and reconstructed a portrait of the dead man. The police identified him and arrested a suspect who confessed when confronted with the skull and the portrait.

It is believed that Gerassimov's method could be used in the cases of suspected Nazis. An x-ray of the skull would be taken and Gerassimov's method would show whether changes had been made in facial contours by plastic surgery. —John Evans, Special Cable to the Toronto Star.

Technical Tips

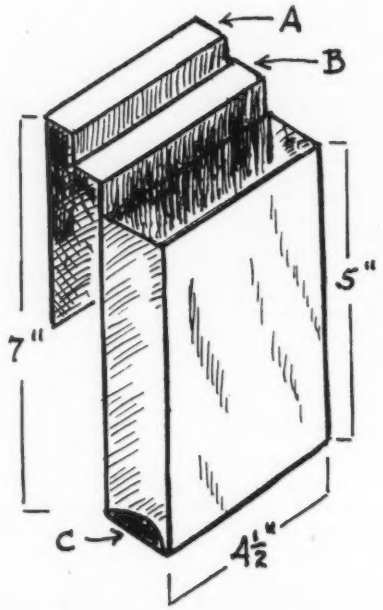
SISTER M. MOONEY,
Hotel Dieu Hospital, Cornwall, Ont.

Waxed Floats for Developing Tanks

A simple way to make wax covers for six gallon developing and fixing tanks. Obtain a Yucca wood splint (from the Fracture Room), bore a hole in the centre and screw on an ordinary kettle-knob, obtainable at any hardware store, 2 for 15 cents. Melt some wax in an empty Cellona Slab tin box, which is just a little larger in size than the Yucca splint. Dip the Yucca wood, holding it by the wooden knob, into the warm wax repeatedly until there are about four coats of wax all over the wood, completely waxing in the screw-nut holding the knob. The rough surface of the wood causes the wax to adhere well. After the wax is set and cooled, carefully round the corners with a penknife and you have a light-weight floating cover with convenient handle. Mark one for the developing tank and one for the fixing tank.

Rack for Floats

We used to stand the covers against the wall and resting on the rim of the wash tank. The wall became unsightly from stain, so we devised a metal holder to fit over the edge of the wash tank in which to stand the covers, when the solutions are in use. See sketch.



Ridge A fits over the top of wash tank.
Ridge B fits over hanger rim inside wash tank.
C indicates a hole at bottom of each side to allow circulation of water through holder, which is immersed in the water in the tank.

Uses for Wax Paper

In coaching a V.O.N. nurse for a Play last year, I discovered that in the homes they use wax paper instead of oil silk for protective covering over moist dressings. I tentatively offered some wax paper out of the film boxes to the supervisors on the Public wards in the hospital for the same purpose. Since then, no wax paper has gone to waste in our department. It is used in the wards for many purposes: over some types of moist dressings; under wet plaster casts, instead of rubber sheeting; for covering containers in the utility rooms, etc., etc.

Uses for Rubber Dental Covers

When rubber jacket type Occlusal films have been used, the rubber case and metal insert make good baggage tags. Type the name, address, etc., on a card, cut and place in the metal-backed rubber case and put a piece of cleaned film over it. Punch a hole in one end to slip a cord through and tie securely to suitcase or over-night bag.* I have also seen them used as frames for a series of interesting snapshots and then grouped together on a large frame.

*Editor's note: This suggested the idea of using the regular size rubber dental covers, fixed up in the manner described, as tags in the garden. They are being tried now and it looks like a good idea.

Controlling Breathing Movement

To control motion due to respiration, try clamping a B.M.R. nose clip to the patient's nose, then ask him to inhale, exhale through the open mouth and close lips. We have found this works admirably in most cases.

S. G. JOHNSTON,
Moose Jaw.

Radiographic Visualization of Sulfa Crystals

An interesting article appears in the latest issue of the Eastman publication, Radiography and Clinical Photography, under the title of Radiographic Visualization of Sulfa Crystals. The authors, Dr. Robert H. Zeis and Sister Jerome, point out that when sulfathiazole crystals were placed in the incision when an open reduction of an elbow was performed, the crystals may be visualized and also the degree of absorption observed after a period of five weeks.

Correspondence

From Sergt. K. LeRoy Benjamin,
No. 6 Can. Gen. Hosp. Overseas.
(Member Nova Scotia Society.)

A word or two of my so-called travels. At present we are in Holland, but for sometime past we have been in the city of Antwerp in Belgium, and it is really a beautiful place; one of those places you must see to appreciate. The work is just the usual routine with a few adverse conditions to make it interesting. Power and dark room facilities are practically nil, but we manage quite well and do some very interesting cases. It is something that really cannot be duplicated for experience in handling all types of patients and cases, with a minimum of both time and machinery. You see on my large machine the best that I can get is 50 MA; not much to work with but still do quite well. As I am at present writing by the doubtful light of an oil lamp, I think it is about time that I called it off with my best regards for a merry Xmas.

From Sergt. G. Book, B93894,
No. 3 Can. Gen. Hosp., R.C.A.M.C.,
In the Field—Italy.

Just a short note to thank you for your thoughtfulness in sending me those cigarettes. I really appreciate the gift and I only wish there were a more appropriate way of showing how grateful I am.

My letters are not of the interesting variety and so I hesitate about writing more often to the people in the Society who are kind enough to keep me posted on all the developments that are taking place in the Radiographic field. To those people and also to the Editor and distributing staff of The Focal Spot, I send my sincerest and heartiest thanks.

Regards to all the members of the Ontario and Canadian Societies and I do hope to attend the next annual convention and meet them all.

Resolutions Committee of the Canadian Society of Radiological Technicians

To All Members:

Please be advised herewith that all resolutions to be presented for consideration at the Annual General Meeting must be received by the Resolutions Committee on or before April 30th, 1945. This is to ensure, as far as possible, publication of such resolutions as have been accepted by the Resolutions Committee, in that issue of The Focal Spot immediately preceding the Meeting.

F. G. REASON, Toronto, Ont., Chairman, Resolutions Committee.

P. E. HUNT, Saskatoon, Sask., Member.

H. M. WELCH, Calgary, Alberta, Member.

The following resolutions have been received and accepted by the Resolutions Committee of the Canadian Society of Radiological Technicians and will be presented to the members for discussion at the Annual Meeting of the Society, which will be held at the Windsor Hotel, Montreal, Quebec, on May 31st and June 1st and 2nd, 1945.

RESOLUTION:

As it is desirable to have as large a representation of delegates as possible at the Annual Convention of our Society, especially from the Member Societies, and as this entails considerable expense in the case of some of the Member Societies, therefore, be is resolved: "That this Meeting approves the inauguration of a systm of pooling the expenses of official degelates to conventions and that a committee be formed to consider and report on this subject."

—ALBERTA SOCIETY OF RADIOLOGICAL TECHNICIANS.

RESOLUTION:

Inasmuch as one of the primary objects of the Society is to promote and encourage the science and art of radiological technique, and believing that this can best be promoted by the employment of registered technicians only; and further, that the achieving of this object will, of necessity, take considerable time and will have to be attained through and with the co-operation of the Canadian Medical Association and the Canadian Association of Radiologists; therefore, be is resolved: "That we request the Canadian Medical Association and the Canadian Association of Radiologists to give consideration to the question of employment by

Radiologists, Hospitals and Institutions, of radiological technicians registered with the Canadian Society of Radiological Technicians only, on and after a date to be set by the Canadian Society of Radiological Technicians and the Canadian Association of Radiologists. This regulation not to apply to student technicians not yet eligible for membership in the Society.

—ALBERTA SOCIETY OF RADIOLOGICAL TECHNICIANS.

RESOLUTION:

Resolved that the following rules and safety regulations based on the recommendations of the International Committee for x-ray and radium protection, and unanimously endorsed at the fifth International Congress of Radiology held in Chicago, September, 1937, at which Canada was well represented, be adopted by the Dominion of Canada:

A—No radiological or radium worker should work more than seven hours per day.

B—Not more than five working days per week; the off-days to be spent as much as possible out-of-doors.

C—They should have not less than four weeks' holidays per year, preferably consecutive.

D—The whole-time workers in hospital x-ray and radium departments should not be called upon for other hospital services.

E—X-ray and particularly radium workers should be systematically submitted both on entry and subsequently submitted at least twice a year, to expert medical, general and blood examinations, special attention being paid to the hands.

—NOVA SCOTIA SOCIETY OF RADIOGRAPHERS.

PROPOSED CHANGES IN BY-LAWS OF CONSTITUTION

The following suggested changes in the By-laws of our Constitution are presented for your consideration and necessary action at the coming Convention.

The necessity for these changes is due to the proposed change made last year in Clause 9C which now calls for a Director to represent each Member Society and will bring into line with Clause 9C, certain clauses of the present Constitution.

It will also clarify the method of electing the Directors and Officers of our Society.

I therefore present the following Notice of Motion to be voted on at the Annual Meeting of the Canadian Society of Radiological Technicians, to be held in Montreal May 31st and June 1st and 2nd.

Under Section re: Ordinary Members

1.—That Clause 9D which reads "Two directors shall be nominated by the ordinary members" be eliminated. As all ordinary members should be, and in the great majority of cases are, members of a Member Society and in-

asmuch as each Member Society is now represented by a Director, the above clause is not now necessary.

2.—That Clause 11B be amended to read "Directors" instead of "Director."

3.—That Clause 11C be eliminated. If Clause 9D is eliminated, Clause 11C will not be necessary.

Under Section re: Officers

4.—That Clause 12C which reads "The President shall be one of the Directors elected under Section D of By-law 9, etc.," be amended to read "under Section C of By-law 9."

5.—That Clause 12D which reads "The Vice-President and Secretary-Treasurer shall be one of the Directors elected under Section D of By-law 9, etc.," be amended to read "under Section C of By-law 9."

Under Section re: Election of Directors

6.—That Clause 16 which reads "The Director to be elected, etc.," be amended to read "The Directors to be elected, etc."

7.—That Clause 17A be eliminated. If Clause 9D is eliminated, this clause will not be necessary.

—ALBERTA SOCIETY OF RADIOLOGICAL TECHNICIANS.

Use Your Vote

ALL MEMBERS OF THE C.S.R.T. HAVE RECEIVED THROUGH THE MAIL A BALLOT TO VOTE FOR YOUR REPRESENTATIVE ON THE BOARD OF DIRECTORS.

MAKE SURE YOU MAIL THIS TO THE SECRETARY WELL BEFORE THE CONVENTION DATE, SO THAT THE CHOICE OF YOUR PROVINCE MAY BE TRULY REPRESENTATIVE.

News Items from the Provinces

ALBERTA SOCIETY OF RADIOLOGICAL TECHNICIANS

CALGARY BRANCH

The February meeting was held at the Colonel Belcher Hospital with the President, Mr. H. M. Welch, in the chair.

The suggestion from the Edmonton Society that a Provincial convention be held this year at Sylvan Lake was agreed to, providing transportation arrangements could be made. The latter part of June was the date suggested.

After the regular business meeting, Capt. T. A. Bell gave an instructive talk and demonstration on radiographic illustration of slipped intervertebral discs and the oblique views of the sacroiliac joints.

Our Society is glad to welcome home Capt. (N/S) F. E. Mitchell, one of our original members who has been in the South African Nursing Service. While she is at present undergoing treatment in the Colonel Belcher Hospital, we hope to have her back with us in the near future.

Miss Helen Kamenka is at present at the Mayo Clinic; we shall expect great things from her when she returns.

Our deepest sympathy is extended to Mr. and Mrs. Sid. Matthews in their recent bereavement.

The fees from the Edmonton and Calgary Societies have practically all been paid but there are still several out-of-town members who have not yet been heard from. We would appreciate receiving their fees so that we can remit in full to the Canadian Society. Our President attended the annual banquet of the Edmonton Society early in March and received a hearty welcome and discussed with them questions pertaining to the Canadian Society.

We regret to note several of our members are on the sick list; our local Secretary, Miss P. Spooner, to whom we also extend our sympathy on the recent loss of her mother; Mr. E. S. Hoare and Mrs. Fraser, and we trust they will soon be well and fit for duty again.

The regular March meeting was held at the Belcher Hospital and after the routine business, Miss F. Shaw gave us a paper describing the discovery of Barium Sulphate.

Mrs. E. Yerex and S/Sgt. Beattie followed with a demonstration of the techniques for the taking of sinuses.

The Alberta Society are hoping to have three delegates attend the convention in May.

EDMONTON BRANCH

Collection of 1945 dues and passing of resolutions for Provincial delegate to forward to Committee for coming Dominion Convention took up the main time of the February meeting. Growing interest in this Edmonton Society was apparent from the fact that we now have a total of 29 fully paid-up members. The Dominion examination set for May, 1945, was also discussed.

Annual banquet was held at Corona Hotel on March 5th, 1945. This was well attended and we had Mr. Welch, President of the Provincial Society, as guest speaker. Following Mr. Welch's speech, it was quite apparent that progress is being made in our Dominion Society of X-ray Technicians.

Arrangements were made for a meeting to be held on April 2nd, 1945, at the Royal Alexandra Hospital.

BRITISH COLUMBIA SOCIETY OF X-RAY TECHNICIANS

The meeting held in January was well attended and Mr. Colin McKenzie of the Victor X--Ray Corporation gave a very interesting talk entitled, "Volts to Kilovolts." This was most instructive and was of great value to some of our junior members.

The meeting held in February had the largest attendance of any so far; thirty-two members being present. We were very fortunate in having Major Fred H. Bonnell, a former Radiologist from Vancouver, who has just recently returned from the battle fronts. He gave an enlightening, entertaining, and instructive address on the various aspects of X-ray under war conditions. He was accorded an attentive hearing and received an enthusiastic ovation at the conclusion of his remarks. Every member present termed it the highlight of our short history.

The March meeting was held on Thursday, March 8th, and quite a number of members were present. Several items came up for discussion. The possibility of sending a delegate to the Montreal Convention was discussed and a committee formed to go into the pros and cons. Mr. J. Harvey gave a very interesting talk on Dark Room procedure and shed a lot of light on a dark subject. After the meeting refreshments were served as usual. We are deeply indebted to the Sisters of St. Paul's Hospital for their kindness in letting us have the use of the Auditorium in the Nurses' Home for all our meetings.

At the time of going to press Mr. S. Gillies of the Picker Corporation is busily engaged in installing the new equipment in Shaughnessy Hospital. He expects to complete the work by March 20th.

The new Military Hospital at Shaughnessy is also to be ready for occupancy by April First. A Picker Unit has been installed there by the energetic Mr. Gillies.

No reports of any marriages have been received and no engagements have been reported. There is a man power shortage, but whether this has anything to do with the marriage situation is not clear at this time.

The attendance at our meetings is improving but we still have plenty of empty chairs. I would like to appeal to all members to try and get to meetings and help build a society along your own lines and not along the lines of the few who do all the work. Dues are a handy thing in the hands of the Treasurer and if you haven't sent in your dues pleasy hurry up before the Income Tax gives you a jolt.

We can't enthuse,
Without the dues.
We can't pay debts,
Without assets.
So pay your bit,
We hope for it.

W. Q. STIRLING,
President.

On February 6th, 1945, Miss E. Devlin, a member of the technical staff of the Royal Jubilee Hospital, Victoria, was married to P.O. G. A. McDonald of the R.C.N.V.R. Mr. McDonald is at the present time stationed in Victoria and after a short honeymoon, Mrs. McDonald resumed her work in the Jubilee Hospital, all her associates extending best wishes to Mr. and Mrs. McDonald.

Lieut. (Nursing Sister) H. W. French, a graduate in nursing and Radiographic Technique of the Royal Jubilee Hospital, Victoria, has been home on furlough from active service in Italy where she served with the American forces. She is now situated in Vancouver, Washington, U.S.A.

MARGARET G. PATERSON, R.T.,
Sub-Editor.

MANITOBA SOCIETY OF X-RAY TECHNICIANS

The February meeting of the Manitoba Society of X-ray Technicians was held at the Central Tuberculosis Clinic, Winnipeg.

Miss Margaret Kreitz, St. Boniface Hospital, discussed "Planigraphic Studies." The speaker described the planigraph, and gave illustrations of some of its uses.

At the March meeting of the Society, Mr. C. J. Bodle of Drs. McMillan & MacPherson discussed "Applied Physics in X-ray Therapy." By use of a number of slides the speaker explained the fundamental physical principles involved in the production of X-rays and the measurement of quantity and quality of the beam, the effect of filters on the mean wave length and the various factors affecting surface and depth intensity. It was of great benefit to new technicians in the X-ray field, and the older members as well.

We are sorry to record the retirement of Miss Verna Thompson as Focal Spot Sub-Editor for Manitoba. Miss Thompson did excellent work while in office and is now succeeded by Miss Margaret Kreitz, St. Boniface Hospital.

NEW BRUNSWICK SOCIETY OF X-RAY TECHNICIANS

A regular meeting of the New Brunswick Society of X-ray Technicians was held at the Lancaster Hospital, West Saint John, at 8 o'clock, January 25th, 1945. There were 10 members and 2 guests present. The Vice-President, Miss Margaret Grant, was Chairman for the evening. The usual business meeting followed. Due to the inability of the speaker, Dr. F. C. Bonnell (Dental Surgeon), to be present, the Rev. Sr. De Lellis graciously consented to give a paper on "Gall Bladder Technique." This paper was most interesting and instructive and the thanks of the members were extended to Sr. De Lellis. After the serving of refreshments the meeting was adjourned. The next meeting will be held at St. Joseph's Hospital, Saint John, the last Thursday of April.

Miss Catherine Handrahan, President of our Society, is now able to be back at work, having been ill for some weeks. We hope she is much improved in health.

Miss Marjorie McNabb has returned to her work as X-ray Technician at the Lancaster Military Hospital, and has automatically resumed her duties of Secretary-Treasurer of the New Brunswick Society of X-ray Technicians.

Lieut. N/S Aldana Leland, R.C.A.M.C., has recently returned from overseas and is now at her home in St. Stephen, N.B.

MARGARET L. GRANT,
Sub-Editor.

NOVA SCOTIA SOCIETY OF RADIOGRAPHERS

Petty Officer, Patrick J. Flynn, one of our early members, recently became the proud daddy of a 6 pound and 2 ounce baby son, and being a chip off the old block, he is Patrick J. also. So best wishes of the Society to Mr. and Mrs. Flynn and Patrick J. (Jr.).

Corp. L. LeRoy Benjamin, who has been overseas for over a year, has been promoted to the rank of Sergeant. Several letters have been received from Sergt. Benjamin since his arrival overseas, and all have shown his extreme interest in the work of the Society. An extract from a recent letter from him will be found in the correspondence section of this issue.

Sergt. J. A. Lowe, at present stationed at Halifax Military Hospital, has recently been promoted to the rank of Staff/Sergeant.

Full particulars of the Refresher Course are not yet available, It is to be held at Sydney, Cape Breton, on May 16th and 17th, under the auspices of the Cape Breton Branch of the Nova Scotia Society and we urge all members who are able to do so to take advantage of this opportunity of keeping in touch with x-ray developments and also of attending the Annual General Meeting which will be held in conjunction with the Refresher Course.

MURDOCH W. A. McLEAN,
Secretary-Treasurer,

QUEBEC SOCIETY OF X-RAY TECHNICIANS

The regular monthly meeting of the Quebec Society was held at St. Justine's Hospital on March 3rd. Plans for the Convention were discussed by a large number of technicians who attended and showed great enthusiasm. A paper entitled "Some Principles of Radiography" was delivered by Mr. Frank Dreisinger of the Picker X-Ray Corporation. The meeting then adjourned.

The final meeting of the Quebec Society was held at St. Mary's Hospital on Saturday, April 9th. Election of officers resulted in the following members being chosen for the coming year:

President ..... MISS J. GAGNE
Vice-President ..... MISS D. CAMPBELL
Secretary ..... MISS A. McDONALD
Treasurer ..... MISS ROSE DUCHARME

A great deal of credit is due to our retiring President, Mr. Simkins, and the executive for a most successful and strenuous year. Gifts of $25.00 each to Miss M. O'Hara and Miss Elizabeth Watson, retiring Secretary and Treasurer, were unanimously approved by the meeting. A very encouraging report on financial assistance from the commercial firms for the forthcoming Convention was read by Mr. Dreisinger.

We sincerely hope to see you in the metropolis of Canada on May 31st and June 1st and 2nd.

FRANK DREISINGER,
Quebec Editor.

ONTARIO SOCIETY OF RADIOGRAPHERS

A meeting of the Central Section of the Ontario Society of Radiographers was held on January 26th, at the plant of the Ferranti Electric Company, Mount Dennis, Toronto. Mr. Anderson conducted the forty-two members who were present on a very interesting tour of the plant. Following that they proceeded to the cafeteria where refreshments were served. Flight/Sergt. Jack Guthrie then showed films to illustrate the functioning of the m.a.s. timer which he uses. This led to a spirited discussion on various factors involved in m.a.s. timers. We would like to thank Mr. Anderson and the Ferranti Company for their kind hospitality.

—WALTER WHITEHOUSE,
Chairman Central Section.

Tenth Annual Meeting and Convention
Royal York Hotel, Toronto, May 12, 1945

The Programme for the Tenth Annual Meeting is practically complete. The Committee has met with considerable difficulty in obtaining the requisite papers. It would seem that our members are somewhat pen-shy, for surely it cannot be for lack of material; maybe it is simply apathy. Nevertheless, an interesting and, we trust, entertaining day has been arranged.

The meeting will be opened at 10 a.m., May 12th, by His Worship the Mayor of Toronto, followed by the Annual General Meeting at which it is hoped all members will take a vocal part.

At the Annual Luncheon, Group Captain D. C. M. Hume of the Department of Veterans Affairs will speak on, and afterwards discuss, rehabilitation with particular reference to radiological technicians. This is a subject that should command the attention of all radiographers (whether in the Armed Forces or not. Group/Capt. Hume will also attend the Round Table Conference to answer questions and explain in more detail what effects, if any, it will have upon radiographers in general.

It is not expected that the conference will devote all its time to this subject. Technical, economic and other questions will be dealt with, so if you have any problems, bring them along. We will do our best to solve them.

A splendid entertainment has been provided for the evening, commencing with the Annual Dinner (no speeches), followed by "The Melodiers," whose songs and dances will be enjoyed by all.

—F. G. REASON, Chairman
Convention Committee.

SASKATCHEWAN SOCIETY OF X-RAY TECHNICIANS

Several from Saskatchewan are planning to attend the Convention in Montreal, where we hope to meet new friends and renew old acquaintances.

A number of applications have been received from prospective new members wishing to write the required examinations.

Radiologists of this province have commented very favourable on the new Dominion Examining Board set-up, and each have a good word for The Focal Spot.

We would like to see a Dominion Society Diploma, covering all Canada.

Mr. R. (Bob) Connell, of the Saskatchewan Anti-T. B. League, has accepted a position with the Picker X-Ray Co., with headquarters in Regina, Sask.

S. G. JOHNSON,
Sub-Editor.

Technicians Available

Several applications for positions have been received at the Secretary's office. Many of these applicants have most desirable qualifications, and have been highly recommended for any positions available. Some suitable positions have been filled, and the applicants listed are still available for employment.

MISS J.E., Manitoba—Registered Nurse. Excellent x-ray training. Member of Canadian and American X-ray Societies. Has now been two years in X-ray in a general hospital. Prefers large city hospital.

SERGT. P.L.G., Ontario—Discharge pending. Has had two years' experience overseas in Orthopaedic and Medical Hospitals with the R.A.F., doing all types of radiographic work, and three years' experience in smaller R.C.A.F. hospitals in Canada. Prefers work in rural area or small town in order to take advantage of the Veterans' Land Act. Highly recommended by English and Canadian Orthopaedic Specialists.

MR. B.N., Ontario—Member of the C.S.R.T. Received x-ray training in a Western sanatorium. For the past two years has been in charge of x-ray in an Ontario sanatorium. Prefers a position in the prairie provinces in sanatorium or general x-ray.

MISS H.M., Manitoba—Registered nurse. Member of Canadian and American X-ray Societies. Excellent x-ray training. Five year's experience in all types of x-ray work. Would prefer hospital work, but would consider a position with a smaller institution.

MISS X.—Excellent x-ray training. Has done extensive survey and sanatorium work, and every type of x-ray work, including therapy. Would prefer city position in British Columbia. Good references.

MISS M.M., Alberta—Registered nurse. Registered technician (American Registry). Has done five years' laboratory work in medical clinic. Is now x-ray and laboratory technician in a small hospital. Would prefer a position in a Doctor's office or clinic.

MISS M.O., Alberta—Member of Canadian and American X-ray Societies. Excellent training. Four years' experience in general x-ray work. Would prefer working in a small hospital.

MLLE. G.P., Quebec—Technicienne en Rayons X depuis cinq ans. Elle posside son diplôme, et elle fait partie de la Société des Techniciens en Rayons X de la Province de Quebec.

MISS M.G., Nova Scotia—Registered x-ray and laboratory technician. Member of the American Society of X-Ray Technicians. Is doing x-ray and laboratory work now, but is more interested in x-ray work.

MISS M.H., British Columbia—Registered technician. Would prefer a position doing x-ray therapy only.

MISS P.F., British Columbia—Completes two years' x-ray training this spring in excellent training centre. Would prefer work in British Columbia, but would consider going elsewhere.

MISS E.M., New Brunswick—Student technician in excellent training centre. Completes course by the end of August, and would like a position as soon as possible after that.

CORP. M.K. (W.D.), Quebec—Received intensified course for the Services at an excellent training centre. Has been in x-ray work for two years now. Upon discharge would like city work in British Columbia, if possible.

MISS E. S., Ontario—Registered Technician (American Registry). Five years' experience. At present senior technician in large hospital. Excellent references. Desires position in Ontario.

NOTICE—For complete names and addresses of applicants, please write to the Secretary.

RE: STUDENT TRAINING

In the Secretary's office there are a great number of applications from those desiring to take x-ray training. Some of these applicants have senior matriculation, some junior. If openings are available for these students, a letter to the Secretary to that effect would be much appreciated.

Secondary Radiation

A Voyage on Anatomical Nomenclature

By MURDOCH McLEAN,
Halifax, N.S.

You gaze upon a human, strutting down the boulevard,
All decked in precious garments, unsoiled, unmarked, unscarred;
You never stop to ponder that beneath those robes, there lies
A perfectly constructed set of bones which synchronize.

To readers of this stanza, I will try to demonstrate
That all those so-called fancy names have found a duplicate;
In that the English language sure has tried to simplify
Those words the Greeks and Romans to the body did apply.

Let's start our skel'tal voyage from that portion known so well
To some, who make good use of it; to others —well, just "Hell,
I just can't think." The FRONTAL bone explains itself quite clear;
The BASE and icy streets, you'll find, connect on too much beer.

Now comes the old PARIETAL, from Paries, meaning wall,
And TEMPORAL comes from Tempus, meaning time; you'll all recall
When through the ravages of time, the graying of your hair,
First noted at the temporal bone, was greeted with despair!

That slender, quill-like process from the Temporal bone projects,
The STYLOID—ah! Like Stylus, or a Pen, in some respects.
The MASTOID, meaning breastlike, comes from Mastos, meaning breast;
The O-I-D on both these words, means "like"—the Greeks thought best.

And next, the PETROUS portion of the Temporal gets its name
From being hardened like a rock, and that is so explained.
Now here's the SELLA TURICA—it's tricky, you'll agree;
They've called it Turkish Saddle—yet, times, not so with me.

The ZYGOMATIC gets its name, Zygoma, Greek for "cheek,"
But Caution! All you lovers—Why? There romance moulds its seat.
MANDIBULUM means "horseshoe," they no doubt look alike;
But—JAW—keep clear of horseshoes, if the feet are still in sight!

Well, next comes Adam's Apple, the so-called HYOID bone,
But "U" and "Y" in Greek lingo—they stand for Upsilon(e);
Since U-shaped stands for Hyoid, and "Y" becomes "H-Y",
Then Y the H don't H-Y-O—I-D become Hyoid?

The ATLAS comes from Charlie, who held the sphere on high,
The AXIS from the Pivot, that swings from side to side;
CERVICAL gives us Cervix, relating to the Neck,
From Dorsum we get DORSAL, which sure is Back, by heck!

The PELVIS means a Basin, you can readily understand.
From Latin we get ILIUM, meaning Flank; Wow! in a jam
To name the Pelvic Basin's sides, which form that nameless bone;
Ah! OS INNOMINATA. Now—let's trend our voyage home.

The SACRUM, meaning "sacred," by outlasting all the rest,
When disinterring skeletons, its quality was best.
And COCCYX, meaning "cuckoo"—What! Slap happy? Nutty? No;
Compare it with a Cuckoo's beak—like Coccyx—right? Let's go.

The CLAVICLE is key-like, and the SCAPULA, a shield;
And STERNUM is that Roman Sword, which warriors did wield.
MANUBRIUM—the handle; the BODY—self-explained;
And ENSIFORM—that process, or the tip, so hence the name.

And so our ship sails onward, a zig-zagged course, I'll rate,
So, readers, just forget the bones I did not demonstrate.
Since TROCHLEA means "pulley," let's lower now the main.
And use the RADIUS to rotate our ship to port again.

So now we'll drop our anchor, and our skel'tal voyage ends,
Though nomenclature could go on indefinitely, my friends.
All thanks to you brave sailors who have sailed our ship back home,
And many to Mr. Cartwright, for inspiring this poem.*

*"The Greeks had a Word for It" L. J. Cartwright, Ontario Radiographer. Vol. III, No. 2.

Radiologist—Snap a 24-hour stomach on that patient.

New Student—Wow! and I always thought that they were buttoned on.

The new student arrived from the classroom with a forlorn and dejected look, donned his hat and coat, and started for the door—

Chief Technician—"Where are you going?"

Student—"I'm quittin'."

Chief Technician—"For what reason?"

Student—"Well, I never murdered anyone in my life."

Chief Technician—"Well, son, that's no reason why you should quit X-ray."

Student—"Oh, yes, it is. The instructor told me in the classroom to-day that if I wanted to get a real good Sella turcica, First, place the victim face down (no doubt, so as not to see what I was doin'), Secondly, to aim about an inch below the occipital, Third, shoot at 10° from a distance of approximately 30 inches, and if the result was perfect, I should be able to pick up the Anterior Horns with my fingers."

At this point the Chief passed out.

Supervisor: "Take this down to the Cystoscopic."

Student: "Sister who?"

Two juniors attending Sunday School were delivered an address by a Medical Missionary, who had recently returned from the Orient. During the course of the address they noted certain letters following the names of some of the speakers. Following one in particular were the letters M.D., D.D., L.L.D. The discussion arose on their return home as to what those letters meant. Finally after a half hour's pondering, the more educated of the two proudly chirped: "Mairzy Doats and Dozy Doats and Little Lambzy Divy."

A requisition was sent to the X-ray office for a chest in Room 11. The technicians, being quite busy, delayed the duty 'till the afternoon. About 1.45 p.m. a second requisition arrived bearing the same name, age, etc., and instead of CHEST were the letters P.D.Q., thanks. So the technician raced to the room, cassette under arm, but found the room vacated. On inquiring as to the nature of the second requisition, he was informed by the M.O. that the Patient Died Quietly.

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- Posterior Ethmoids
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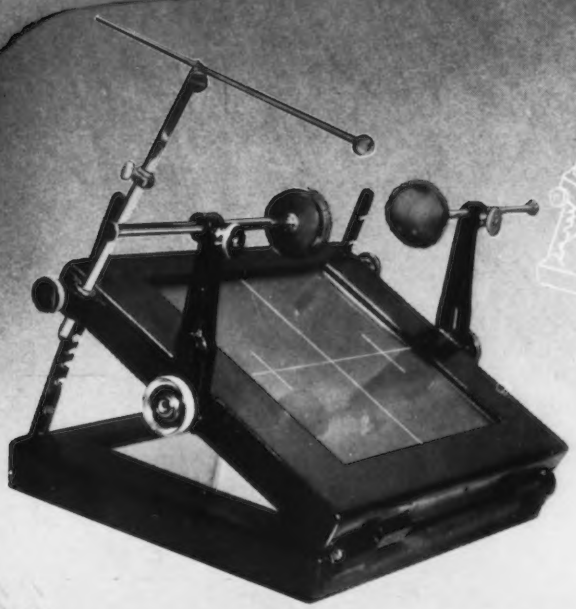

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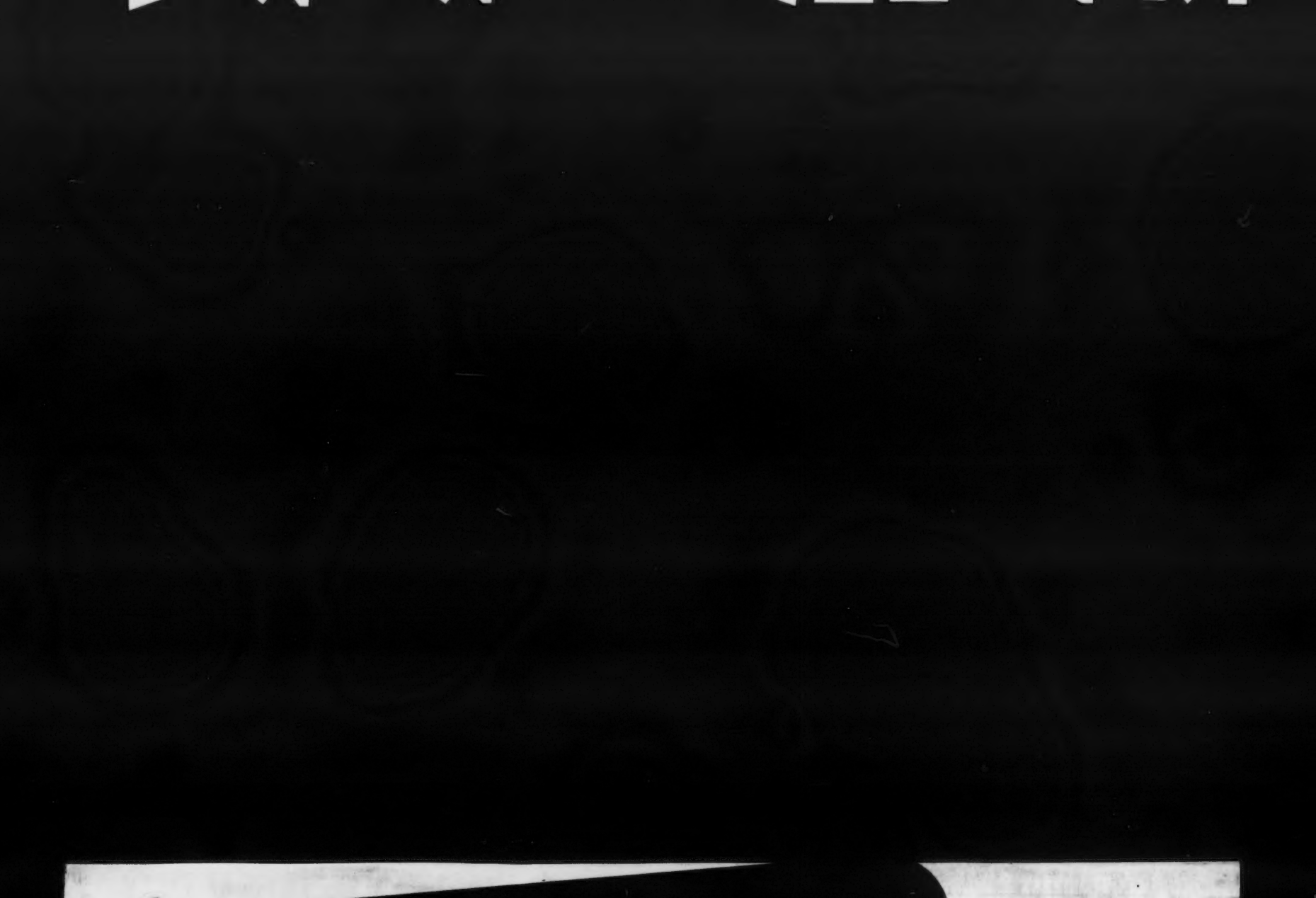
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